REMARKS

Claims 1-33 are pending. Claims 1, 21, 25, and 33 are in independent form.

Applicants thank the Examiner for the courtesy of a telephone interview granted on October 18, 2005, at which time arguments as hereinafter developed were discussed. The organization of arguments herein follows their presentation during the interview.

Claims 21 and 33

In the action mailed September 9, 2005, claims 21 and 33 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,849,376 to Barclay et al. (hereinafter "Barclay").

Claim 21 relates to a method that includes forming a photoresist with a polymer backbone and a lactone. The lactone is bonded to the polymer backbone so as to undergo a ring opening reaction upon exposure to an acid catalyst. The lactone includes a tertiary carbon bonded to the lactone carbonyl oxygen.

Claim 33 relates to a photoresist that includes a lactone fused to a polymer backbone. The lactone includes a tertiary carbon bonded to the lactone carbonyl oxygen.

As discussed during the October 18, 2005 interview, lactones are cyclic esters. Submitted herewith are pages 873-

878 of *Organic Chemistry Second Edition* by G. Marc Loudon (Benjamin/Cummings Publishing, 1988) (hereinafter "Loudon"). Loudon characterizes the reactions undergone by lactones as comparable to those undergone by esters (page 876) and contrasts the acidic cleavage of tertiary esters with acid-catalyzed ester hydrolysis (pages 874-876).

These pages support applicants' contention that all lactones do not necessarily include a tertiary carbon bonded to the lactone carbonyl oxygen, as claimed. Rather, only those lactones that are cyclic analogues to tertiary esters will include a tertiary carbon bonded to the lactone carbonyl oxygen. Further, lactones that include a tertiary carbon bonded to the lactone carbonyl oxygen would appear to react by a different mechanism than other lactones if the analogous reactivity of lactones and esters identified by Loudon holds.

Please note that none of Barclay's lactones include a tertiary carbon bonded to the lactone carbonyl oxygen. Therefore, although Barclay's photoresists can include lactones, Barclay neither describes nor suggests elements and/or limitations of claims 21 and 33 and the anticipation rejections should be withdrawn.

Claim 25

Claim 25 was rejected under 35 U.S.C. § 102(e) as anticipated by Barclay.

Claim 25 relates to a method that includes radiating an area of a chemically amplified photoresist in a vacuum environment and generating an acid within the photoresist to catalyze a ring-opening reaction in the photoresist without molecules outgassing from the photoresist.

Barclay neither describes nor suggests such a method. Barclay's resist generally includes photoacid-labile groups that undergo cleavage reactions upon exposure to acid. *See, e.g.*, col. 5, line 50-53, col. 5, line 58 - co. 6, line 13, and col. 6, line 35-70. To the extent that these groups detach from a polymer backbone upon exposure to a photo-generated acid, they will outgas in a vacuum environment. *See, e.g.*, para. [0019] of the present specification.

Therefore, claim 25, and the claims dependent therefrom, are not anticipated by Barclay and the rejection should be withdrawn.

Claim 1

Claim 1 was rejected under 35 U.S.C. § 102(e) as anticipated by Barclay.

Claim 1 relates to a photoresist. The photoresist includes a lactone bonded to a polymer backbone. The lactone is reactable under semiconductor processing conditions and in the presence of an acid to undergo a ring-opening reaction and form an open ring structure without generating an organic species that can outgas in a vacuum environment.

Barclay neither describes nor suggests such a photoresist. As discussed above, Barclay's photoacid-labile groups undergo cleavage reactions upon exposure to acid and will outgas in a vacuum environment.

Accordingly, claim 1, and the claims dependent therefrom, are not anticipated by Barclay and the rejection should be withdrawn.

Applicant asks that all claims be allowed. No fees are believed due at this time. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,
BY
JOHN F. CONROY
REG. NO. 45,485

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~~Scott C. Harris~~
Reg. No. 32,030
Attorney for Intel Corporation

Fish & Richardson P.C.
PTO Customer No. **20985**
12390 El Camino Real
San Diego, California 92130
(858) 678-5070 telephone
(858) 678-5099 facsimile
10562184.doc